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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/471,497	12/23/1999	ISAO MIHARA	0039-7495-2S	7481
22850	7590	07/29/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			BHATNAGAR, ANAND P	
			ART UNIT	PAPER NUMBER
			2623	
			DATE MAILED: 07/29/2004	

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/471,497

Applicant(s)

MIHARA ET AL.

Examiner

Anand Bhatnagar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,7,9,16,23,27 and 29-37 is/are pending in the application.
- 4a) Of the above claim(s) 4, 7, 16, and 23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 9, 27 and 29-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/23/99 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 15.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Response to Arguments

1. Applicant's arguments, see paper # 14, filed on 05/07/04, with respect to the rejection(s) of claim(s) 1, 9, and 27 under 35 USC 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Koike et al. (U.S. patent 5,173,865).

Examiner refers to the rejection below.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 9, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Koike et al. (U.S. patent 5,173,865).

Regarding claims 1 and 9: An image recognition method (col. 1 lines 5-12) comprising:

obtaining a deformed image by three-dimensionally deforming a captured range image having three-dimensional information including depth information of an object to be sensed (fig. 1 elements 5-8, col. 1 lines 34-65, wherein two

temporally consecutive image frames, which contain 3D objects, are compared to detect 3D motion of the object between the frames. In order to perform this detection step the previous frame (read as a captured range image) is first overlapped by a model of the object in the image then the overlapped area is divided and each block that is created is compared to the corresponding block/region to the next/current image. This dividing of the previous image is read as deforming the image.); and

recognizing three-dimensional motion of an object in the range image by comparing the obtained three-dimensionally deformed image with a newly captured range image (col.1 lines 6-12 and 39-59, wherein the current 3D image is compared to the overlapped and divided/deformed previous 3D image in order to detect/recognize 3D motion. The current image is read as a newly captured range image. These images are obtained from a television camera or the like so they are read as being captured images.).

Regarding claim 27: It is rejected for the same reason as claims 1 and 9 above and for the following limitation of: a computer readable program code and an image capture device. It is inherent that this process is carried out by a computer contained with a computer readable program code. The image capture device is the television camera.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 29-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koike et al. (U.S. patent 5,173,865).

Regarding claims 29-37: An image recognition apparatus wherein the deformed image is a rotated deformed image, contracted by rotation, or moved in parallel.

Koike et al. discloses to perform 3D motion analysis on an object which has undergone motion by comparing two temporally successive images. Features of the object are compared between images in order to determine the object's motion. Koike further discloses that an object can undergo different types of motion, such as rotational, translational, parallel movement, etc. (col. 3 lines 18-33 and col. 4 lines 45-67). Koike discloses to take these motions into consideration to deform the image model being used to match it to the object in the image by making adjustments to the object model. Koike does not disclose to deform the current or previous captured images, by any of these different types of motions (rotational, translational, and/or parallel motions), to detect the motion of the object between two temporally successive images. It would have been obvious to one skilled in the art to deform the current or previous image with any

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or all of these different types of motion in order to obtain a correct 3D motion of a object because a 3D object can move in any of or all of the 3D directions.

Contact Information

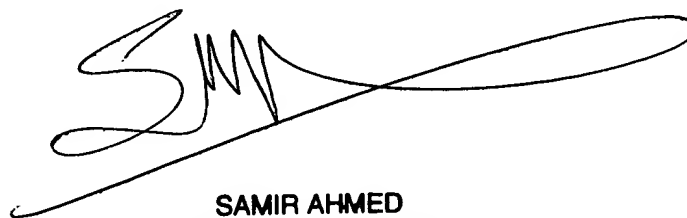
3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anand Bhatnagar whose telephone number is (703) 306-5914, whose supervisor is Amelia Au whose number is 703-308-6604, group fax is 703-872-9306, and Tech center 2600 customer service office number is 703-306-0377.

AB

Anand Bhatnagar

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July 25, 2004

A handwritten signature in black ink, appearing to read 'SAMIR AHMED', with a long horizontal flourish extending to the right.

**SAMIR AHMED
PRIMARY EXAMINER**